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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,162	09/17/2003	D'nardo Colucci	8390-28	6355
20792	7590	12/07/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			BLACKMAN, ROCHELLE ANN J	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			2851	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/665,162	COLUCCI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rochelle Blackman	2851	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>04/12/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the "second image source", "second array of image pixels", and "second lens assembly" as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "second image source", "second array of image pixels", and "second lens assembly", must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 70, 72, 74, and 76. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 8-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Waller et al. (U.S. Patent No. 2,280,206).

Waller disclosers discloses an optical projection system (see Figs. 1-3), comprising: a first image source (6, 7, 8, or 9) that is configured to generate a first array of image pixels (11, 12, or 13); a first lens assembly (see *lens systems* on pg, 2, 1<sup>st</sup> column, lines 53-54) that is configured to project the first array of image pixels onto a non-planar surface (1); a second image source (6, 7, or 8) that is configured to generate a second array of image pixels (11, 12, or 13); and a second lens assembly (also see *lens systems* on pg, 2, 1<sup>st</sup> column, lines 53-54) that is configured to project the second

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array of image pixels onto the non-planar surface such that the first array of image pixels and the second array of image pixels overlap along a single edge and a combination of the first array of image pixels and the second array of image pixels covers a continuous portion of the non-planar surface (see locations of 11, 12, and 13 on the inside of 1 and pg. 2, 1<sup>st</sup> column, lines 25-28); wherein the first and second lens assemblies are configured to respectively project the first and second arrays of image pixels onto the surface such that there is a constant angular separation between adjacent pixels (see projected light rays of 11-13); wherein the non-planar surface is a hemispherical surface (see 1); wherein the first and second lens assemblies are configured to respectively project the first and second arrays of image pixels onto hemispherical surfaces of varying radii (also see 11-13); further comprising: a dome (see 1-3) that comprises an inner surface (see inside area of 1); and wherein the first and second lens assemblies are configured to respectively project the first and second arrays of image pixels onto the inner surface of the dome such that the first array of image pixels and the second array of image pixels overlap along the single edge and the combination of the first array of image pixels and the second array of image pixels covers a continuous, 180 degree portion of the inner surface (see 6-8, 11-13, pg. 1, 2<sup>nd</sup> column, lines 46-50, and pg. 2, 1<sup>st</sup> column, lines 25-28); wherein the first lens assembly and the second lens assembly are positioned apart from each other such that a brightness of the first and second arrays of image pixels where the first and second arrays of image pixels overlap along the single edge on the surface is approximately equal to a brightness of the first and second arrays of image pixels where the first and

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second arrays of image pixels do not overlap on the surface (see pg. 2, 1<sup>st</sup> column, lines 25-28 - the brightness of the "image pixels" are all considered to be "equal" due to the avoidance of discontinuity of the projected image); wherein the combination of the first array of image pixels and the second array of image pixels covers a continuous, 180 degree portion of the surface (also see 6-8, 11-13, pg. 1, 2<sup>nd</sup> column, lines 46-50, and pg. 2, 1<sup>st</sup> column, lines 25-28); a method of projecting an image (see function of elements in Figs. 1-3), comprising: projecting a first array of image pixels (6, 7, or 8) onto a non-planar surface (1); and projecting a second array of image pixels (6, 7, or 8) onto the non-planar surface such that the first array of image pixels and the second array of image pixels overlap along a single edge and a combination of the first array of image pixels and the second array of image pixels covers a continuous portion of the non-planar surface (see locations of 11, 12, and 13 on the inside of 1 and pg. 2, 1<sup>st</sup> column, lines 25-28); wherein projecting the first array of image pixels comprises: projecting the first array of image pixels onto the non-planar surface such that there is constant angular separation between adjacent pixels (see projected light rays of 11-13); and projecting the second array of image pixels onto the non-planar surface such that there is constant angular separation between adjacent pixels (also see projected light rays of 11-13); wherein the surface is a hemispherical surface (see 1-3); wherein projecting the first array of image pixels and projecting the second array of image pixels comprises: projecting the first and second arrays of image pixels onto the surface such that a brightness of the first and second arrays of image pixels where the first and second arrays of image pixels overlap along the single edge on the surface is

approximately equal to a brightness of the first and second arrays of image pixels where the first and second arrays of image pixels do not overlap on the surface (see pg. 2, 1<sup>st</sup> column, lines 25-28 - the brightness of the "image pixels" are all considered to be "equal" due to the avoidance of discontinuity of the projected image); wherein the combination of the first array of image pixels and the second array of image pixels covers a continuous, 180 degree portion of the non-planar surface (see 6-8, 11-13, pg. 1, 2<sup>nd</sup> column, lines 46-50, and pg. 2, 1<sup>st</sup> column, lines 25-28).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waller et al. (U.S. Patent No. 2,280,206) in view of Colucci et al. (U.S. Patent No. 5,762,413).

Waller discloses the claimed invention except for "wherein the first and second image sources comprise first and second cathode ray tubes, respectively; wherein the first and second image sources comprise first and second field emitter arrays, respectively; wherein the first and second image sources comprise respective units



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selected from the group of units consisting of a digital light processing unit, a liquid crystal display unit, and a liquid crystal on silicon unit".

Colucci teaches that it is well known to those having skilled in the art providing the first and second image sources comprise first and second cathode ray tubes (see *cathode ray tube* in col. 6, lines 6-18), respectively; the first and second image sources comprise first and second field emitter arrays (see *field emitter array* in col. 6, lines 6-18), respectively; and the first and second image sources comprise respective units selected from the group of units consisting of a digital light processing unit, a liquid crystal display unit, and a liquid crystal on silicon unit" (see 46a-46c and col. 6, lines 6-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "first and second image sources" of the Waller reference with "first and second cathode ray tubes", "first and second field emitter arrays", or "units" consisting of: "a digital light processing unit, a liquid crystal display unit, and a liquid crystal on silicon unit", as taught by Colucci, in order to provide "first and second image sources" that can be implemented in a variety of optical projection systems.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of copending Application No. 10/109,385 in view of Waller et al. (U.S. Patent No. 2,280,206).

Claims 1-45 of app. '385 disclose the invention of claims 1-15 except for "the first array of image pixels and the second array of image pixels overlap along a single edge".

Waller teaches providing the first array of image pixels (11, 12, 13, or 14) and the second array of image pixels (11, 12, 13, or 14) overlapping along a single edge (see inside area of 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide "overlapping" of the "first array of image pixels" and the "second array of image pixels" in the "optical projection system"/ "method of projecting an image" of claims 1-45 of app. '385, as taught by Waller in order to avoid discontinuity of the complete image projected by the "first lens assembly" and the "second lens assembly" and/or avoid discontinuity of the complete image formed by the projected

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"first array of image pixels" and "second array of image pixels" (see pg. 2, 1<sup>st</sup> column, lines 25-28).

This is a provisional obviousness-type double patenting rejection.


### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

  
JUDY NGUYEN  
PRIMARY EXAMINER